

Application No. 10/759,527
Amendment Dated: October 15, 2007
Reply to Office Action of: April 13, 2007

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

Claim 1

1. (currently amended) A stent having a generally tubular body with a plurality of circumferentially spaced longitudinal struts extending parallel to a longitudinal axis of said body, circumferentially adjacent pairs of said struts being interconnected solely by a set of linkages axially spaced from one another and defining a predetermined space between adjacent pairs of said struts, each of said linkages having a plurality of links angularly disposed relative to one another in an unexpanded condition such that when a radial force is exerted on said tubular body, relative rotation between adjacent links and plastic deformation occurs, thereby increasing said space between said adjacent pairs of said struts and permitting radial expansion of said stent, said struts inhibiting relative axial movement between said linkages and foreshortening of said body, each of said linkages having a pair of hinge points spaced apart at predefined locations along said linkage, said hinge points deforming upon radial expansion of said stent to facilitate relative rotation of said links, wherein said hinge points are provided by deformable zones of relative weakness along said links to control the locations within said linkage at which bending will occur.

2. (original) A stent according to claim 1 wherein said zones of relative weakness are provided by a reduced cross-sectional area.

3. (new) A stent having a generally tubular body with a plurality of circumferentially spaced longitudinal struts extending parallel to a longitudinal axis of said body, circumferentially adjacent pairs of said struts being interconnected by a set of linkages axially spaced from one another and defining a predetermined space between adjacent pairs of said struts, each of said linkages having a plurality of links angularly disposed relative to one another in an unexpanded condition such that when a radial force is exerted on said tubular body, relative rotation between adjacent links and plastic deformation occurs, thereby increasing said space between said adjacent pairs of said struts and permitting radial expansion of said stent, said struts inhibiting relative axial movement between said linkages and foreshortening of said body, each of said linkages having a pair of axial links interconnected by a circumferential link, characterized by said axial links and circumferential links having end portions that intersect to provide a node

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having a cross section greater than the central portion of adjacent links to provide a pair of spaced hinge points adjacent to said node, said hinge points deforming upon radial expansion of said stent to facilitate relative rotation of said links, and to control the locations at which bending will occur.

4. (new) A stent according to claim 3 wherein said stent is further characterized by all of said sets of linkages being unidirectionally facing.
5. (new) A stent according to claim 3 wherein said linkage is further characterized by each of said pair of spaced axial links being connected at one end to respective ones of said struts and interconnected at an opposite end by a said circumferential link.
6. (new) A stent according to claim 5 wherein said axial links are further characterized by being perpendicular to said circumferential link in said unexpanded condition.
7. (new) A stent according to claim 5 wherein said axial links are further characterized by being connected to respective ones of said struts by other circumferential links.
8. (new) A stent according to claim 7 wherein said other circumferential links are connected to said axial links by a node having a cross section greater than said other circumferential link.
9. (new) A stent according to claim 3 wherein said axial links taper from opposite end portions to provide a central portion of reduced cross section .
10. (new) A stent according to claim 3 wherein said circumferential links taper from opposite end portions to provide a central portion of reduced cross section.
11. (new) A stent according to claim 3 wherein said struts remain in parallel relationship with said longitudinal axis upon radial expansion of said stent and that zones of relative weakness are provided at each intersection of adjacent links of each of said linkages by a change in the cross section of the links at or adjacent to the intersection of said links to provide a pair of spaced hinge points, whereby relative rotation between one pair of links is distributed between said hinge points adjacent said intersection.

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12. (new) A stent as claimed in claim 11 wherein said node is rectangular.
13. (new) A stent according to claim 3 wherein each of said linkages includes a pair of axially extending links connected to respective ones of said struts and interconnected to one another at a location spaced axially from their respective connections to said struts, at least a pair of links of said one linkage having a central portion of cross section less than end portions of said link to provide said hinge points spaced apart along said linkage and disposed to permit rotation of each of said axially extending links relative to said struts upon application of a radial load to said stent.
14. (new) A stent according to claim 3 wherein selected ones of said struts are discontinuous thereby providing a plurality of gaps along the length thereof, the axial location of said gaps being staggered about the circumference of said body whereby relative axial movement between said linkages is inhibited by struts circumferentially spaced from and axially aligned with said gaps.
15. (new) A stent according to claim 14 wherein said struts axially aligned with said gaps are further characterized by being reduced in section relative to adjacent links to facilitate flexure thereof.
16. (new) A stent according to claim 14 wherein said gaps are further characterized by being configured to provide only a pair of diametrically aligned struts at selected ones of said axial locations to facilitate flexure of said stent.
17. (new) A stent according to claim 16 wherein said pairs of diametrically aligned struts are further characterized by pivot axes for relative pivotal movement between said adjacent linkages and said axes are disposed at 90° to one another.